Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for the temporal synchronization of clocks ~~(15)~~ which are assigned to ~~nodes (10)~~nodes that communicate via a communication medium (5), characterized by the following steps:

at least for the ~~nodes (10)~~nodes that are to be synchronized: acquiring ~~(110)~~ state values which are dependent on a time base of the ~~nodes (10)~~nodes;

for all acquired state values: filing ~~(120)~~ the acquired state value at a corresponding position in a first ~~list (L)~~list, L, comprising (k+1) positions, if the acquired state value is smaller than the (k+1) smallest element or is smaller than or equal to the (k+1) smallest element of the ~~list (L)~~list, L, and where k is a predefinable error tolerance;

for all acquired state values: filing ~~(130)~~ the acquired state value at a corresponding position in a second ~~list (H)~~list, H, comprising (k+1) positions, if the acquired state value is greater than the (k+1) greatest element or is greater than or equal to the (k+1) greatest element of the ~~list (H)~~list, H;

computing~~forming (160)~~ a mean ~~value (M)~~value, M, from the (k+1) smallest element of the first ~~list (L)~~list, L, and the (k+1) greatest element of the second ~~list (H)~~list, H, if $n \geq (2k+2)$, where n is the number of acquired state values;

determining ~~(170)~~ a correction ~~value (K)~~value, K, as a function of the mean ~~value (M)~~value, M; and

correcting ~~(180)~~ the clocks ~~(15)~~ that are to be synchronized such that a current state value of this clock ~~(15)~~ takes the correction value into account.

2. (currently amended) A method as claimed in claim 1, characterized in that the filing ~~(120, 130)~~ of the determined state values in the first ~~list (L)~~list, L, and/or in the second ~~list (H)~~list, H, is carried out sequentially.

3. (currently amended) A method as claimed in claim 1, characterized in that the first ~~list (L)~~list, L, is formed by corresponding registers ~~(L0, L1, . . . , Lk)~~, L0, L1, . . . , Lk, and/or the second ~~list (H)~~list, H, is formed by corresponding registers ~~(H0, H1, . . . , Hk)~~, H0, H1, . . . , Hk.

4. (currently amended) A method as claimed in claim 1, characterized in that

the first ~~list (L)~~list, L, is initialized with values which are greater than the greatest state value that is to be expected; and/or

the second ~~list (H)~~list, H, is initialized with values which are smaller than the smallest state value that is to be expected.

5. (currently amended) A method as claimed in claim 1, characterized in that

during filing ~~(120)~~ of an acquired state value in the first ~~list (L)~~list, L, a sorting in terms of the size of the stored state values is retained so that value(L0) ≥ value(L1) ≥ . . . ≥ value(Lk) is always true, where L0, L1, . . . , Lk denote the (k+1) positions of the ~~list (L)~~list, L, and value(Li) is the value at a position (Li); and

during filing ~~(130)~~ of an acquired state value in the second ~~list (H)~~list, H, a sorting in terms of the size of the stored state values is retained so that value (H0)≤value(H1) ≤ . . . ≤ value(Hk) is always true, where H0, H1, . . . , Hk denote the (k+1) positions of the ~~list (H)~~list, H, and value (Hi) is the value at a position (Hi).

6. (currently amended) A method as claimed in claim 1, characterized in that a state value (Z) is stored at a position (Li) of the first ~~list (L)~~list, L, as a function of the following steps:

the positions ~~(L0, L1, . . . , Lk)~~, L0, L1, . . . , Lk, are searched for a position (Li) of the first ~~list (L)~~list, L, so that the following is true:

value(L0) ≥ value(L1) ≥ . . . ≥ value(Li) ≥ Z ≥ value(L(i+1)) ≥ . . . ≥ value(Lk); if no such position (Li) is found, then the state value (Z) is rejected;

if such a position (Li) is found, then for all positions {(Lj|0 ≤ j<i} the value (Lj) stored at the position (Lj) is replaced by the value(L(j+1)) stored at the position L(j+1)

and the state value (Z) is stored at the position (Li) of the ~~list (L)~~list, L.

7. (currently amended) A method as claimed in claim 1, characterized in that a state value (Z) is stored at a position (Hi) of the second ~~list (H)~~list, H, as a function of the following steps:

the positions ~~(H0, H1, . . . , Hk)~~, H0, H1, . . . , Hk, are searched for a position (Hi) of the second ~~list (H)~~list, H, so that the following is true: value(H0) ≤ value(H1) ≤ . . . ≤ value(Hi) ≤ Z ≤ value(H(i+1)) ≤ . . . ≤ value(Hk);

if no such position (Hi) is found, then the state value (Z) is rejected;

if such a position (Hi) is found, then for all positions {(Hj|0 ≤ j<i} the value(Hj) stored at the position Hj is replaced by the value(H(j+1)) stored at the position H(j+1) and the state value (Z) is stored at the position (Hi) of the ~~list (H)~~list, H.

8. (currently amended) A method as claimed in claim 1, characterized in that the following steps are carried out:

as a function of an error tolerance (k), a set (B) of predefinable end values ({B0, B1, . . . , B(k-1)}) is predefined such that

B0=0; Bi ≤ B(i+1), for all iϵ{0, 1, . . . , (k-1)}; and

2j<B(j), for all jϵ{1, . . . , (k)}; if Bk ≥ n, a value i for iϵ{0, 1, . . . , (k-1)} is selected as a function of the number n of acquired state values such that the condition Bi ≤ n < B(i+1) is true; if Bk ≤ n, i=k is selected; and

the mean ~~value (M)~~value, M, is formed from the values value(L(k-j)) and value(H(k-j)) stored at the positions L(k-i) and H(k-i).

9. (currently amended) A method as claimed in claim 1, characterized in that the following values are predefined:

error tolerance k=2;

end value B1=3; and

end value B2=8.

10. (currently amended) A ~~node (10)~~node which communicates with other ~~nodes (10)~~nodes by means of a communication medium, characterized in that the ~~node (10)~~node

has a clock ~~(15)~~;

has means for acquiring state values, the state values being dependent on a time base of the ~~node (10)~~node and/or on a time base of the other nodes;

has a first ~~list (L)~~list, L, comprising (k+1) positions and a second ~~list (H)~~list, H, comprising (k+1) positions;

has means for filing ~~(120)~~ an acquired state value at a corresponding position of the first ~~list (L)~~list, L;

has means for filing ~~(130)~~ an acquired state value at a corresponding position of the second ~~list (H)~~list, H;

has means for forming ~~(160)~~ a mean ~~value (M)~~value, M, from an element of the first ~~list (L)~~list, L, and an element of the second ~~list (H)~~list, H;

has means for forming a correction ~~value (K)~~value, K; and

has means for correcting the clock ~~(15)~~.

11. (currently amended) A ~~node (10)~~node which communicates with other ~~nodes (10)~~nodes by means of a communication medium, characterized in that the ~~node (10)~~node

has a clock ~~(15)~~;

has means for acquiring state values, the state values being dependent on a time base of the ~~node (10)~~node and/or on a time base of the other nodes;

has a first ~~list (L)~~list, L, comprising (k+1) positions and a second ~~list (H)~~list, H, comprising (k+1) positions; has means for filing ~~(120)~~ an acquired state value at a corresponding position of the first ~~list (L)~~list, L;

has means for filing ~~(130)~~ an acquired state value at a corresponding position of the second ~~list (H)~~list, H; has means for forming ~~(160)~~ a mean ~~value (M)~~value, M, from an element of the first ~~list (L)~~list, L, and an element of the second ~~list (H)~~list, H;

has means for forming a correction ~~value (K)~~value, K; and

has means for correcting the clock ~~(15)~~, characterized in that a method as claimed in claim 1 is carried out in the ~~node (10)~~node.

12. (currently amended) A communication system (1) which has a number of ~~nodes (10)~~nodes that communicate via a communication medium (5), characterized in that at least one ~~node (10)~~node

has a clock ~~(15)~~;

has means for acquiring state values;

has a first ~~list (L)~~list, L, comprising (k+1) positions and a second ~~list (H)~~list, H, comprising (k+1) positions;

has means for filing ~~(120)~~ an acquired state value at a corresponding position of the first ~~list (L)~~list, L;

has means for filing ~~(130)~~ an acquired state value at a corresponding position of the second ~~list (H)~~list, H;

has means for forming ~~(160)~~ a mean ~~value (M)~~value, M, from an element of the first ~~list (L)~~list, L, and an element of the second ~~list (H)~~list, H;

has means for forming a correction ~~value (K)~~value, K; and

has means for correcting the clock ~~(15)~~.

13. (currently amended) A communication system (1) which has a number of ~~nodes (10)~~nodes that communicate via a communication medium (5), characterized in that at least one ~~node (10)~~node

has a clock ~~(15)~~;

has means for acquiring state values;

has a first ~~list (L)~~list, L, comprising (k+1) positions and a second ~~list (H)~~list, H, comprising (k+1) positions;

has means for filing ~~(120)~~ an acquired state value at a corresponding position of the first ~~list (L)~~list, L;

has means for filing ~~(130)~~ an acquired state value at a corresponding position of the second ~~list (H)~~list, H;

has means for forming ~~(160)~~ a mean ~~value (M)~~value, M, from an element of the first ~~list (L)~~list, L, and an element of the second ~~list (H)~~list, H;

has means for forming a correction ~~value (K)~~value, K; and

has means for correcting the clock ~~(15)~~, characterized in that a method as claimed

in claim 1 is carried out in at least one ~~node (10)~~node.

14. (currently amended) A computer program which can be run on a computer, in particular on a microprocessor, characterized in that the computer program is stored in a memory element and programmed to carry out a method as claimed in claim 1 when it is run on the computer.

15. (currently amended) A computer program as claimed in claim 14, wherein the memory element comprises~~characterized in that the computer program is stored in a memory element, in particular in~~ a Random Access Memory (RAM), a Read Only Memory (ROM) or a Flash memory.